IN THE CLAIMS:

1. (Currently Amended) A process for producing a polyurethane foam comprising the steps of:

a) providing an organic polyol having a molecular weight in the range of 2000 to 7000, wherein said polyol has a level of unsaturation of between 0.001 and 0.030 meq./gram;

b) providing an organic isocyanate;

c) providing a blowing agent;

d) providing a catalyst composition, said catalyst composition consisting essentially of reactive ~~catalyst~~catalysts;

e) mixing said polyol, said isocyanate, and said blowing agent in the presence of said catalyst composition,

so as to produce a polyurethane foam.

2. (Currently Amended) A process according to claim 1 wherein providing a catalyst composition includes providing a catalyst composition wherein said reactive ~~catalyst comprises one or more~~ catalysts are selected from the group consisting of: (2-(2-(2-dimethylaminoethoxy-)ethyl methyl amino-)ethanol); (bis-(3-dimethylaminopropyl)-imino-propan-2-ol); (2-propanol, (1,1'-((3-(dimethylamino)propyl)imino)bis- ; and (tetramethyliminobispropylamine).

3. (Original) A process according to claim 1 wherein said isocyanate is an organic di-isocyanate.

4. (Previously Presented) A process according to claim 3 wherein said organic di-isocyanate is selected from the group consisting of toluene diisocyanate, diphenylmethane-4,4'-diisocyanate, polymerized isocyanates; aliphatic polyisocyanates; alicyclic polyisocyanates; pre-polymers with end isocyanate groups; denatured isocyanate; and further mixed polyisocyanates thereof.

5. (Original) A process according to claim 1 wherein said blowing agent is selected from the group consisting of: butane, pentane, halogenated hydrocarbons, carbon dioxide, acetone, and water.

6. (Original) A process according to claim 5 wherein said blowing agent comprises a halogenated hydrocarbon present in any amount between 2.0 and 30 percent by weight of the total polyol used in making said polyurethane foam.

Claims 7-15 (Cancelled)

16. (Previously Presented) A process according to claim 4 wherein said pre-polymers with end isocyanate groups are selected from the group consisting of toluenediisocyanate pre-polymer, and diphenylmethane-4,4'-diisocyanate pre-polymer, said pre-polymers obtained by reacting a corresponding isocyanate with a polyol.

17. (Previously Presented) A process according to claim 4 wherein said denatured isocyanate is a carbodiimide denatured substance.

18. (Currently Amended) A method comprising:

reacting an organic polyisocyanate and a polyol in the presence of a reactive amine catalyst composition, the organic polyol having a molecular weight in the range of 2000 to 7000 and a level of unsaturation of between 0.001 and 0.030 meq/gram and the reactive amine catalyst composition ~~including at least one~~ consisting essentially of amine ~~catalyst~~ catalysts that ~~is~~ are capable of being consumed by chemical reaction during the formation of a foam; and

forming a molded flexible polyurethane foam that has a carbon emission of 0.1 or less per gram of foam.

19. (Withdrawn) The method of claim 18 further including testing the carbon emission of said molded flexible polyurethane foam by sealing one gram of finished foam in a 22 milliliter glass container and heating to 120 °C for 300 minutes before sampling one milliliter of the headspace from said glass container for analysis by gas chromatography.

20. (Previously Presented) The method of claim 18 wherein reacting an organic polyisocyanate and a polyol in the presence of a reactive amine catalyst composition includes reacting said organic polyisocyanate and said polyol in the presence of a reactive amine catalyst composition that includes a blend of reactive catalysts.

21. (Previously Presented) The method of claim 20 wherein reacting an organic polyisocyanate and a polyol in the presence of a blend of reactive catalysts includes reacting said organic polyisocyanate and said polyol in the presence of a blend of (2-(2-(2-dimethylaminoethoxy-)ethyl methyl amino-)ethanol) and (bis-(3-dimethylaminopropyl)-imino-propan-2-ol).

22. (Previously Presented) The method of claim 18 wherein reacting an organic polyisocyanate and a polyol in the presence of a reactive amine catalyst composition includes reacting in the presence of a reactive amine catalyst composition in an amount of 0.02 to 10 parts by weight based on 100 parts of said polyol.

23. (Previously Presented) The method of claim 18 wherein forming a molded flexible polyurethane foam includes forming a molded flexible polyurethane foam having a core density of 44 to 45 kg/cm^3.

24. (Previously Presented) The method of claim 18 wherein forming a molded flexible polyurethane foam includes forming a molded flexible polyurethane foam that recovers at least 90 % of its original height if compressed according to the ASTM 3574 standard.

25. (Previously Presented) A method comprising:

reacting an organic polyisocyanate and a polyol in the presence of a reactive amine catalyst composition, the organic polyol having a molecular weight in the range of 2000 to 7000 and a level of unsaturation of between 0.005 and 0.025 meq/gram and the reactive amine catalyst composition including at least one amine catalyst that is capable of being consumed by chemical reaction during the formation of a foam; and

forming a molded flexible polyurethane foam that recovers at least 90 % of its original height when compressed 50 % according to the ASTM 3575 standard.

26. (Previously Presented) The method of claim 25 wherein forming a molded flexible polyurethane foam includes forming a molded flexible polyurethane foam that recovers at least 80 % of its original height when compressed 50 % of its original height for 22 hours at 49 °C and 100 % relative humidity.

27. (Previously Presented) The method of claim 25 wherein forming a molded flexible polyurethane foam includes forming a molded flexible polyurethane foam that has a carbon emission of 0.1 or less per gram of foam.

28. (Previously Presented) The method of claim 25 wherein reacting an organic polyisocyanate and a polyol in the presence of a reactive amine catalyst composition includes reacting said organic polyisocyanate and said polyol in the presence of a blend of (2-(2-(2-dimethylaminoethoxy-)ethyl methyl amino-)ethanol) and (bis-(3-dimethylaminopropyl)-imino-propan-2-ol).

29. (Previously Presented) The method of claim 28 wherein reacting an organic polyisocyanate and a polyol in the presence of a reactive amine catalyst composition includes reacting an organic polyisocyanate comprising 90 % by weight of total isocyanate toluene diisocyanate and 10 % by weight of total isocyanate polymeric diphenylmethane diisocyanate with said polyol.